

Loctite® Zeta® 7760 UV Curing Wand System

Part Numbers:

98450 (Standard System)

958239 (Light Intensity Monitor Compatible)

TABLE OF CONTENTS

1. PLEASE OBSERVE THE FOLLOWING	3
1.1 EMPHASIZED SECTIONS.....	3
1.2 ITEMS SUPPLIED.....	3
1.3 FOR YOUR SAFETY.....	3
1.4 FIELD OF APPLICATION, (INTENDED USAGE).....	4
2. DESCRIPTION	4
2.1 THEORY OF OPERATION.....	4
2.2 OPERATING ELEMENTS AND CONNECTIONS, REFERS TO FIGURE 1.....	5
3. TECHNICAL DATA	7
3.1 ENERGY REQUIREMENTS.....	7
3.2 DIMENSIONS.....	7
3.3 UV OUTPUT CHARACTERISTICS.....	7
4. INSTALLATION	7
4.1 SPACE REQUIREMENTS.....	7
4.2 CONNECTIONS.....	8
5. OPERATING THE UNIT	8
5.1 INSERTING AND REMOVING THE LIGHT GUIDES.....	8
5.2 POWERING UP.....	8
5.3 ADJUSTING DUAL WAND FOR MAXIMUM OUTPUT.....	9
5.4 USING FOOT SWITCH / REMOTE DEVICE.....	10
6. CARE AND MAINTENANCE	11
6.1 REPLACING THE LAMP MODULE.....	11
6.2 CHANGING THE OPTICAL FILTER.....	13
REPLACEMENT PROCEDURE	13
7. TROUBLESHOOTING	14
8. DOCUMENTATION	15
8.1 WIRING DIAGRAM.....	15
8.2 PIN CONNECTIONS.....	16
8.3 REPLACEMENT PARTS AND ACCESSORIES.....	16
9. WARRANTY	17

1. Please Observe the Following

1.1 Emphasized Sections



WARNING!

Refers to safety regulations and required measures that protect the operator or other persons from injury or danger to life.



Caution!

Emphasizes what must be done or avoided so that the unit or other property is not damaged.



Notice:

Gives recommendations for better handling of the unit during operation or adjustment, as well as for service activities.

1.2 Items Supplied

1 ZETA® 7760 UV Curing Wand System, (part number 98450 or 958239)

Note: Part number 958239 is compatible with Loctite Light Intensity Monitor 891494.

1 UV lamp/reflector assembly (installed in unit)

1 Pair of UV protective glasses

1 Foot switch

1 Users manual

1 Power cord

1.3 For Your Safety

For safe and successful operation of the unit, read these instructions completely. If the instructions are not observed, the manufacturer can assume no responsibility. Be sure to retain this manual for future reference.



WARNING!

Always wear the included UV safety glasses or glasses that conform to ANSI Z87.1/CSA Z94.3 when operating the unit.



WARNING!

Always cover hands, face and other parts of the body that may be exposed to UV light.



WARNING!

Never look into the end of the light guide.



WARNING!

Never open the shutter mechanism without the light guide installed.



WARNING!

Never remove the cover of the unit without first switching the power off and unplugging the power cord.



WARNING!

Damage to the power cord or the housing can result in contact with live electrical parts. Check the power cord and housing before each use. If the power cord or unit is damaged, do not operate.

The unit may be repaired only by a Loctite authorized service technician.

1. Please Observe the Following (continued)



Caution!

Never turn the unit on without the lamp connected to the power supply.



Caution!

The energy emitted from the end of the light guide can heat any surface that it is directed at. Care must be taken to determine the proper offset distance and exposure time.



Caution!

Turning the lamp on and off frequently will cause the UV output of the lamp to decline at a faster rate. It is recommended that the unit be left on during breaks and short down times.



Caution!

Avoid making sharp bends in the light guide, as this will cause a loss of UV energy or possibly cause permanent damage. To prevent permanent damage, the minimum bend radii are 2.4 inches for a single light guide and 1.6 inches for a dual light guide.

1.4 Field of Application, (Intended Usage)

This Loctite® ZETA® 7760 UV Curing Wand System is designed for use with Loctite products that cure when exposed to ultraviolet light produced by the unit. The UV energy is directed towards the product through a liquid filled light guide that is ordered separately. Several configurations of light guides are available from Loctite, including single and dual ended types. The unit is also capable of interfacing with an external relay or PLC circuit. The 7760 Wand System 958239 is compatible with the Loctite Light Intensity Monitor 891494. 7760 Wand System 98450 is not compatible with the Loctite Light Intensity Monitor. Otherwise, the systems are identical.

2. Description


2.1 Theory of Operation

When the unit is switched on, electrical power is immediately supplied to the lamp and ignition should occur within several seconds. As soon as the lamp ignites, the green “Lamp On” indicator, located on the front panel, will come on. Also, an internal relay will change state, making a closure across pins three and four of the footswitch connector, located on the rear panel of the unit. It will take several minutes for the lamp to reach full power. Curing takes place when the shutter is opened, allowing UV light to be directed from the end of the liquid filled light guide to the adhesive. The curing parameters, (UV irradiance and exposure time) must be determined before use. The UV irradiance, (the strength of the UV light), at the adhesive surface can be varied by adjusting the distance of the light guide from the bond. If the light guide is moved to within ½ inch of the adhesive surface, vapors from the curing process may build up on the end of the light guide, reducing the UV intensity. The UV exposure time required to complete the curing process depends primarily on the UV irradiance and the properties of the adhesive product.

The timed exposure cycle starts by momentarily engaging the footswitch or when an externally operated device such as a PLC makes a relay closure across pins 1 and 9 of the nine pin foot switch connection on the rear panel. In the manual operating mode, the shutter remains open for as long as the footswitch or alternate external device maintains contact between pins 1 and 9.

2. Description (continued)

The hour meter, located on the front panel, records the total hours of operation accumulated by the lamp. UV lamps undergo a gradual reduction in UV output over time and it is recommended that the lamp output be monitored on a regular basis. The Loctite® Light Intensity Monitor 891494 is a recommended accessory for the 7760 Wand System. Frequently turning the power on and off will increase the rate that the lamp degrades, therefore, it is recommended that the unit be left on during short work breaks such as lunch and other idle periods.

 Notice: The hour meter should only be reset when a new lamp is installed.

2.2 Operating Elements and Connections, refers to Figure 1

1. Power Inlet Module
Connect line cord to power inlet module.
2. Power Fuse Holder
Fuse is located in the power module.
3. Power Switch
4. Foot Switch Connection
Standard 9 pin “D” connector for foot switch or other external switch.
5. Light Guide Receptacle
Is used to retain the light guide.
6. Digital Exposure Timer
Controls the period of time the shutter is opened. The UV time is set by pressing the buttons located directly under the LCD, which indicates seconds. The manual/timed selector switch must be set to “timed.” When the foot switch is pressed the shutter mechanism will open for the indicated time and the timer will begin counting down. When the unit times out the shutter will close and the LCD will indicate the original pre-set time interval.
7. Lamp Hour Meter
The hour meter indicates the cumulative time that the lamp has been ON.
8. Mode Selector – Manual/Timed
When set to “manual” the UV light is passed through the light guide for as long as the foot switch is depressed. In the “timed” mode, the timer’s LCD display indicates exposure time and the cycle is initiated when the foot switch is momentarily engaged.
9. Hour Meter Reset
Use switch to reset the hour meter to zero after installing a new lamp module.
10. Lamp On Indicator
The lamp will ignite when the main power is switched on. The green lamp on indicator located on the front panel will light to confirm that the lamp is operating.

2. Description (continued)

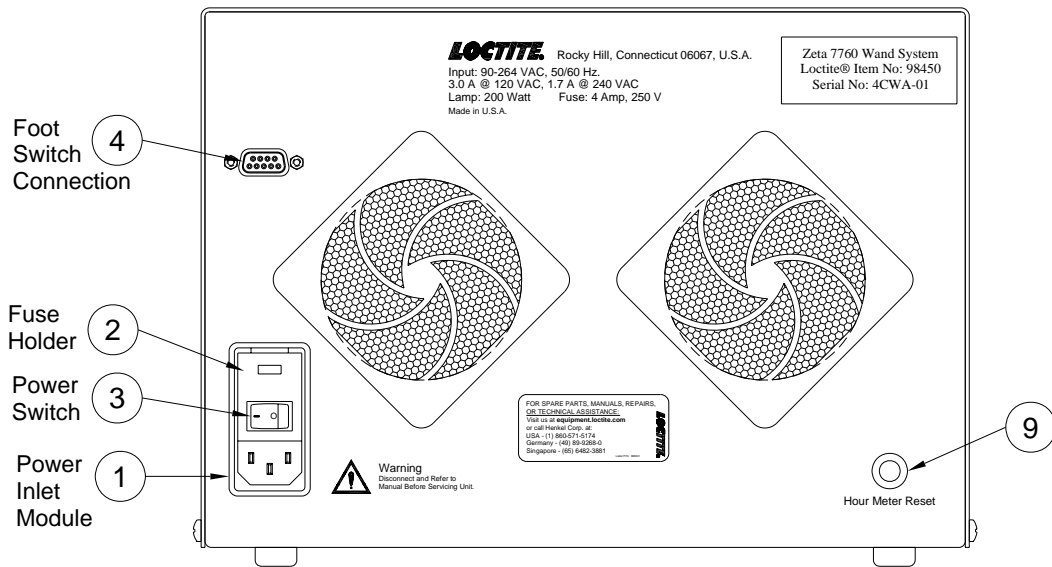
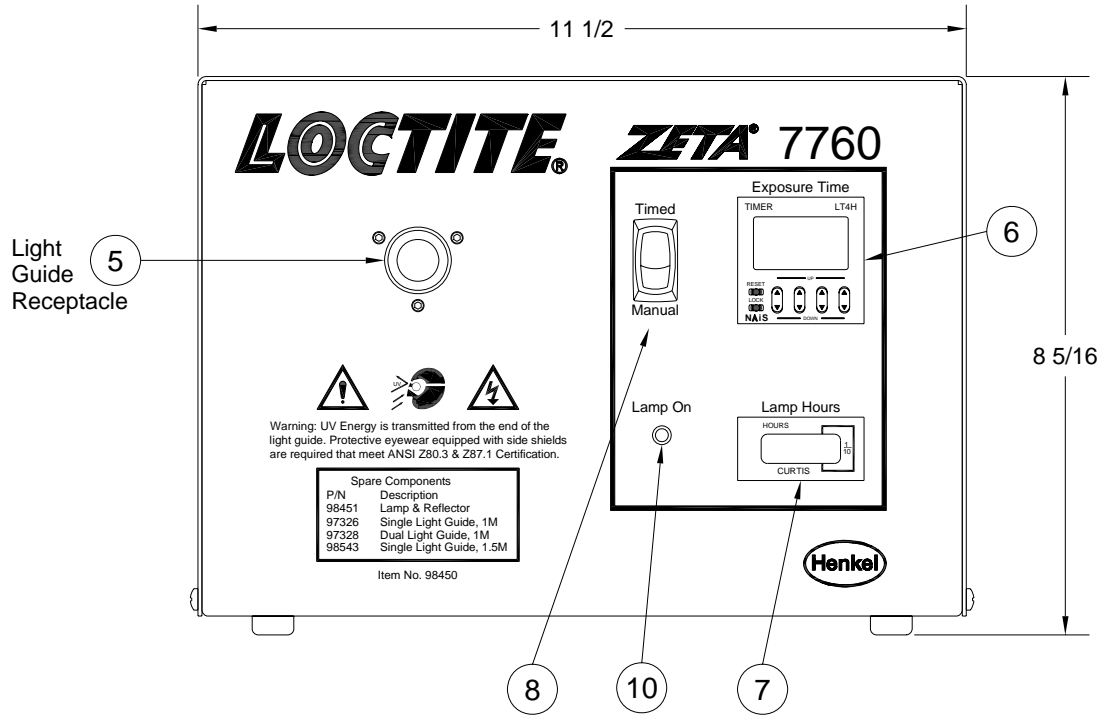


Figure 1.

3. Technical Data

3.1 Energy Requirements

Input Voltage Ranges: 90-132 and 180-264 VAC

Input frequency Range: 47 to 63 Hz

Auxiliary Output Voltage: 27 volts DC, nominal

Main fuse located in power module in rear of unit: 4A/250V, 5mm

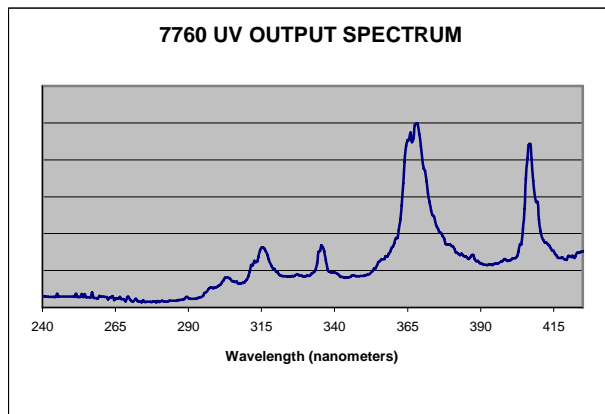
3.2 Dimensions

Housing: Approximately 11.5 inch W x 13.5 inch D x 8.4 inch H

Weight: Approximately 18 pounds

3.3 UV Output Characteristics

Initial UV output: 16 to 20 W/sq.cm typical. Exact output measurement is dependent on the brand and calibration method of the meter used, as well as the condition and straightness of the light guide.



4. Installation

4.1 Space Requirements

A space of 12" wide x 16" deep x 9" height is required. It is important to have at least 8 inches of space behind the unit to insure proper airflow. The Loctite[®] ZETA[®] 7760 UV Curing Wand System only needs to be connected to a 120V/60Hz outlet to operate.


Caution!

Do not block the intake and exhaust fans located on the back of the housing.

Caution!

The unit should always be operated with the rubber support feet resting on a flat surface. Do not operate with the unit resting on its side or at an angle greater than 15 degrees, front to back.

4.2 Connections

 **WARNING!** Make sure the power switch is OFF and the unit is unplugged before proceeding.

- Plug the power cord into the power module located at the bottom left of the rear panel.
- Plug the cord into the electrical utility outlet.
- Insert the light guide into the receptacle located on the left side of the front panel until it is fully engaged.
- Plug the footswitch into the nine pin D-sub connector located on the rear panel. Or, if the unit is being operated from an external processor, a closure across pins one and nine is required to actuate the shutter. An internal relay closure connected to pins three and four of the footswitch connector provides conformation that the curing lamp is on. When the lamp is not on, an open circuit exists across pins three and four.

5. Operating the Unit

5.1 Inserting and Removing the Light Guides

Caution!

Be sure to remove the plastic end caps before attempting to use the light guide.

Caution!

If the free end of the light guide is secured at a fixed location, sharp bends should be avoided since this causes a decrease in UV power.

Caution!

Never pull on the jacketing portion of the light guide. During installation or removal, grasp the light guide on the strain relief nearest the input end of the light guide.

- Installing single light guide - Insert the large end of single light guide into the light guide receptacle located on the left side of the front panel. Push light guide firmly until it is fully engaged.
- Installing dual light guide – Insert the dual wand light guide into the light receptacle and rotate the collar assembly (951639) so that the scribed line on the collar is in the 12 o'clock position. See section 5.3 “Adjusting Wand for Maximum Output.”

 **Notice:**

It is important that the rotational position of a dual light guide be set to maximize the UV output for each wand. This setting is specific to each curing unit and light guide (See section 5.3 - Adjusting Dual Wand).

5.2 Powering Up

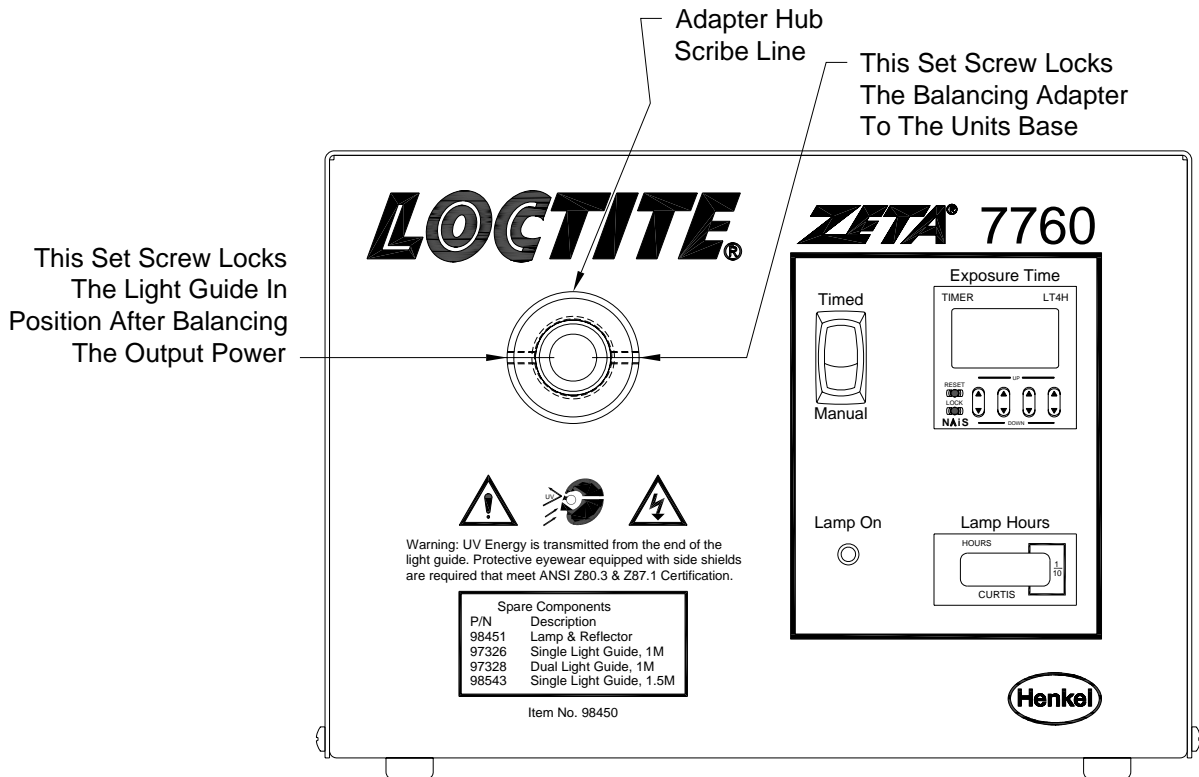
1. Switch the main power ON. The power switch is on the lower left of the rear panel.
2. The green LED on the front panel will come on to confirm that the lamp has ignited.
3. Allow approximately five minutes for the lamp to reach full power.

4. Set the operating mode selector switch to “timed” or “manual”.
5. For manual operation, engage the footswitch to start UV exposure and hold until the curing cycle is complete. When the footswitch is released the exposure will end immediately. For timed operation use the keys directly below the numbers on the display to set the desired exposure time. Momentarily engage the footswitch to start the cycle. The UV exposure will begin immediately and continue until the system times out.
6. UV exposure cycles may be initiated by using an externally operated device, such as a PLC controlled relay in place of the footswitch.

Notice:

Avoid shutting the main power off for brief periods of time. Frequent start-ups will cause the lamp to decay at an accelerated rate. If the system is shut down, wait a minimum of ten minutes before restarting. Once the lamp is ignited, allow it to operate for a minimum of fifteen minutes before turning it off.

5.3 Adjusting Dual Wand for Maximum Output



Objective

Balance the UV output from the two light guides of Loctite® P/N 97328.


Tools Needed

3/32 inch hex key

Loctite® 98720 UV Spot Radiometer P/N: 1079258

5. Operating the Unit (continued)

Setup

1. Install the collar assembly (951639) over the part of the light guide receptacle that protrudes from the front of the unit. Rotate the collar assembly until the scribed line is in the 12 o'clock position. Use the set screw to secure the collar in that position.
 2. Insert the input end of the light guide into the light guide receptacle/collar assembly pushing it as far forward as it will go. Tighten the set screw on to the light guide.
 3. Turn on electric power to unit.
 4. Set shutter timer to 2 seconds.
 5. Insert one of the light guide ends into a Loctite[®] 98720 UV Spot Radiometer P/N: 1079258.
 6. Press the radiometer start switch.
 7. Actuate foot switch to open shutter.
 8. Release the radiometer start switch while the shutter is still opened.
 9. Read and record the radiometer reading.
 10. Position the second light guide in the radiometer.
 11. Press the radiometer start switch.
 12. Actuate foot switch to open shutter.
 13. Release the radiometer start switch while the shutter is still opened.
 14. Read and record the radiometer reading.
 15. Compare the two radiometer readings.
-  16. If the lower reading is equal to or greater than 90% of the higher reading, the dual wand is balanced.
17. If the lower reading is less than 90% of the higher reading, loosen the set screw and rotate the collar a small increment around the light guide receptacle. Use the set screw to secure the collar in that position.
 18. Take and compare another set of radiometer readings.
 19. Continue until the lower reading is equal to or greater than 90% of the higher reading.
 20. Tighten set screw to lock the input end of the dual wand in position.

Notice:

If a radiometer is not available, it is recommended that Loctite Service be contacted at 1-800-LOCTITE (1-800-562-8483) to insure optimum performance when installing a new dual ended light guide.

5.4 Using Foot Switch / Remote Device

The ZETA[®] 7760 can also be actuated using a foot switch or by external devices. The foot switch connection is made up of a 9 pin D connector. Making a dry-contact relay closure across pins 1 and 9 can actuate the unit.

6. Care and Maintenance

Notice:

It is recommended that the UV output from the lamp be monitored regularly using a Loctite[®] 98720 UV Spot Radiometer P/N: 1079258. If a radiometer is not used to monitor the lamp, it is recommended that the lamp be replaced when the hour meter, located on the front panel, indicates 1,000 hours of operating time has elapsed. It is normal for the lamp output to slowly decline over operating time, however, the effective life of the lamp will decrease significantly faster if it is turned on and off frequently.



Caution!

It is recommended that the end of the light guide be positioned no closer than ½ inch from the Loctite[®] product being cured. The heat transmitted by the lamp can adversely affect the properties of the cured product or possibly cause damaged to the part surface.

Notice:

Vapors from some products may gradually accumulate on the end of the light guide, reducing the UV output. It should be inspected regularly and cleaned as necessary using isopropyl alcohol and a soft, clean cloth.



Caution!

Avoid placing sharp bends in the light guide. This reduces the UV output and may permanently damage the light guide. If the light guide is mounted on a fixture, secure it by the metal exit fitting and not the flexible plastic section.



Caution!

Be sure to remove the plastic end caps before attempting to use the lightguide.



Notice: The intake and exhaust fan filter elements should be replaced as needed to insure proper cooling of the power supply and UV lamp assembly. They should be inspected routinely.

6.1 Replacing the Lamp Module




Caution!

Do not touch the inside surface of the lamp reflector or the lamp. Contaminants from hands will create “hot spots” and cause the module to fail prematurely. If either are accidentally touched, carefully wipe them with a clean, soft cloth and isopropyl alcohol.

1. Switch the power off and unplug the unit.
2. Allow several minutes for the lamp to cool.
2. Remove the four screws from the sides of the housing and lift off the cover.
3. Remove the sheet metal shroud that encases the lamp.
4. Disconnect the lamp leads by separating the Male/Female connector.
6. Flip the wire retainer over the lamp holder.
7. To remove the lamp module grasp the white ceramic hub and carefully pull back and lift up at the same time.
8. Install the new lamp module and flip retainer back over the lamp holder.
9. Reconnect the power leads.

6.1 Replacing the Lamp Module (continued)

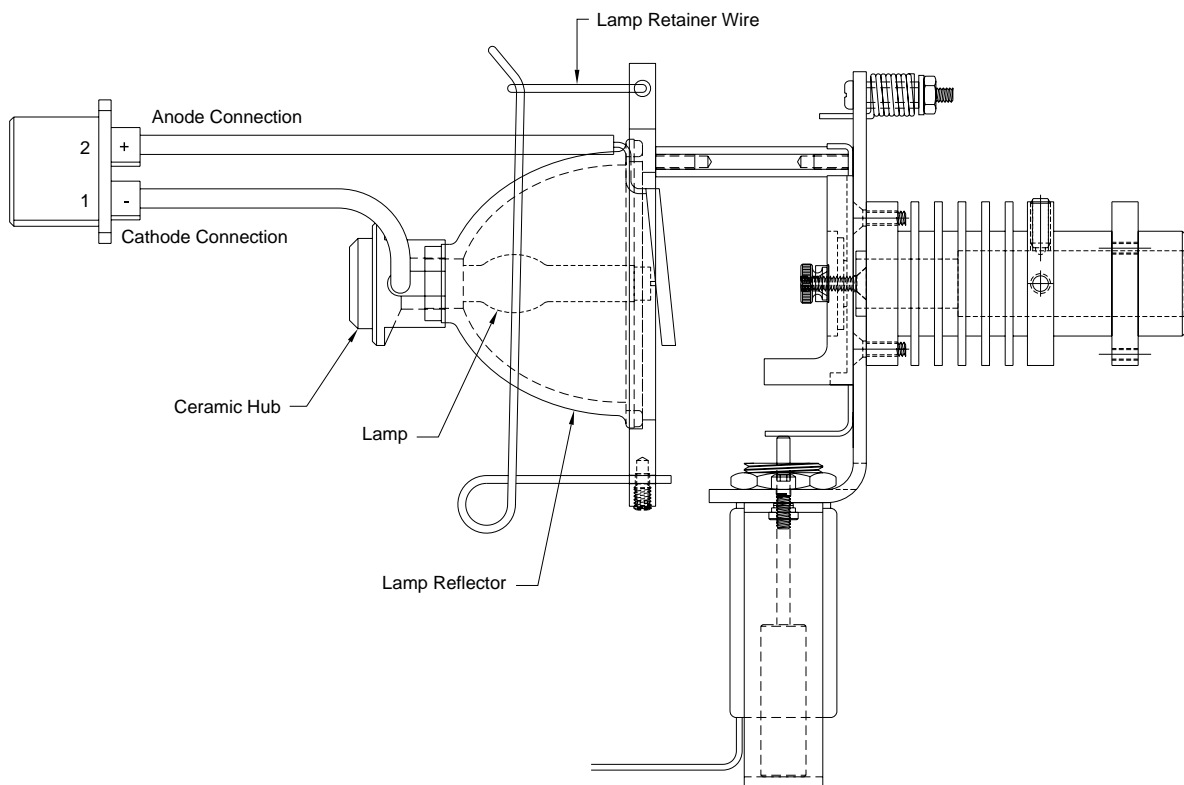
10. The bare power lead attachment to the front of the reflector should be approximately in the twelve o'clock position. If it is not, grasp the ceramic hub of the lamp, pull back slightly and rotate until the lead is between the two white plastic insulators.
11. Replace the lamp shroud and the enclosure cover.
12. Press the lamp hour reset switch to set the hour meter to zero.

 Notice: Step 11 should only be done when a new lamp is installed.

WARNING!

The UV lamp used in this unit contains a very small amount of mercury. Disposal of lamps should be done in accordance with state and local regulations.

Lamp Changeover Components



6.2 Changing The Optical Filter

The 7760 uses a special optical filter designed to reduce heat. It is retained by two clips and thumbscrews in front of the light receiving end of the light guide. The filter that comes with the unit, P/N 98599 is designed to allow the use of the standard light guides. This arrangement will transmit the wavelengths needed to obtain excellent surface cure and cure depth in most applications. In cases where it is difficult to achieve dry to the touch surfaces, an alternate filter, P/N 98598, is designed to improve the surface cure ability. P/N 98598 must be used with the extended range light guides.

Replacement Procedure

1. Unplug the unit and remove the cover.
2. Remove the heat shroud, exposing the lamp and optical staging.
3. Remove the light guide from the unit and turn the unit onto its front side.
4. Looking down at the light guide entrance hole, loosen the two thumbscrews securing the filter.
5. Swing the two retaining clips out of the grooves allowing removal of the filter.
6. Set the unit back onto its feet and then remove the filter from the unit.
7. Set the unit back on its front side and insert the new filter into the hole.
8. Replace the retaining clips and thumbscrews.

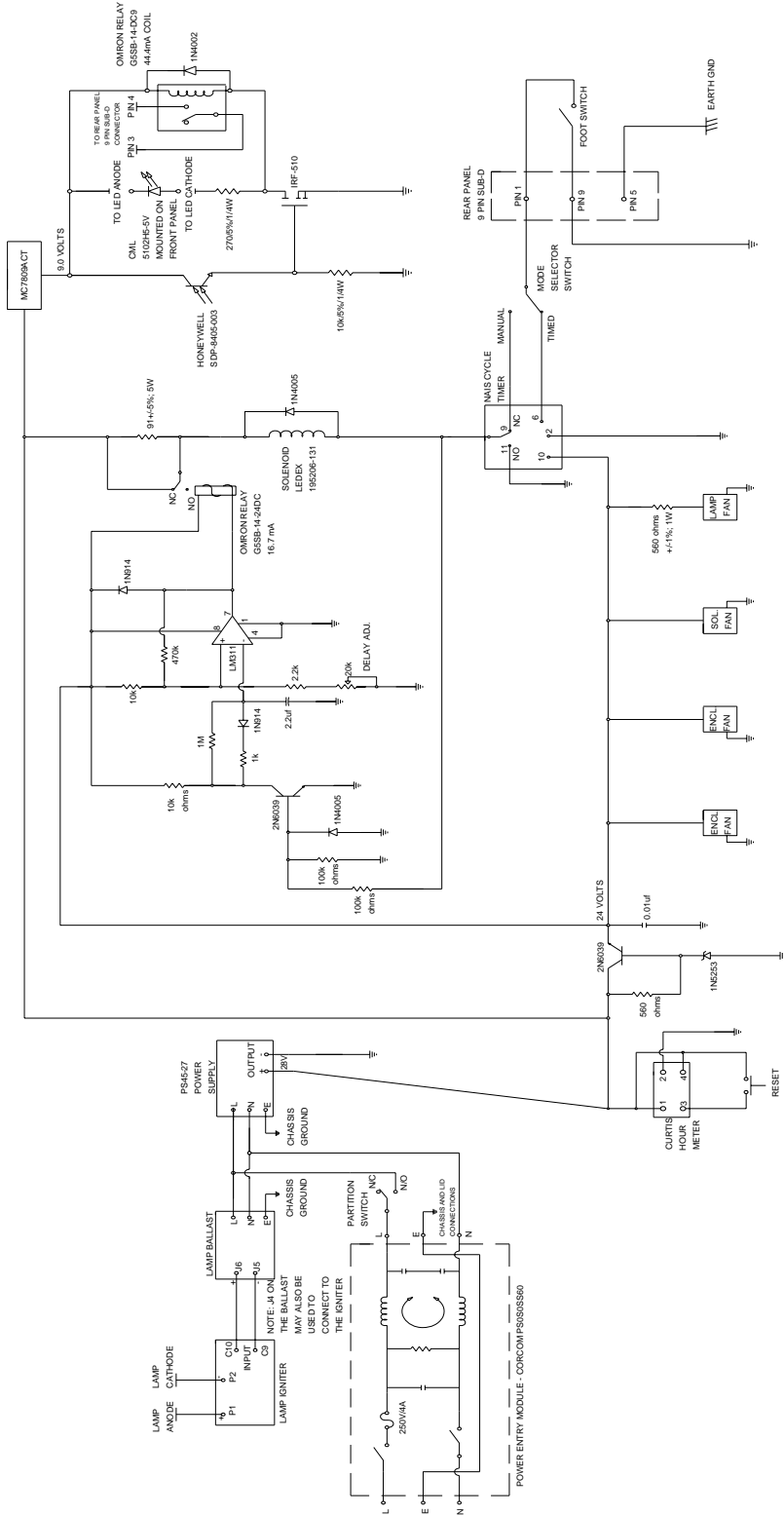
! Caution! Avoid touching the surfaces of the filter by holding the edges only. If the surfaces are touched or become dirty use a clean, soft wiper and isopropyl alcohol to remove the contaminants.

7. Troubleshooting

<u>Type of Malfunction</u>	<u>Possible Causes</u>	<u>Corrections</u>
Power does not come on.	- No voltage present.	Check wall circuit.
	- Defective fuse.	Replace fuse.
	- Defective line cord	Replace.
Lamp does not light.	- Lamp leads are not connected.	
	- Defective power supply	Call 800-562-8483 for technical assistance
	- Lamp failure.	Replace lamp module.
Power comes on but light is not emitted from the light-guide. The shutter mechanism makes no noise when the footswitch is engaged.	- Footswitch is not plugged in.	Check footswitch connection.
	- Defective footswitch.	Call 800-562-8483 for technical assistance
	- Defective shutter mechanism.	Call 800-562-8483 for technical assistance
	- Faulty power supply or supply connection.	Call 800-562-8483 for technical assistance
All system functions appear to be operating, but the product does not cure completely. (If a radiometer is used to monitor the UV output, the power is low.)	- UV output has declined due to normal lamp aging.	Replace lamp module.
	- End of light guide has an accumulation of product or other contaminants.	Clean light guide with soft cloth and isopropyl alcohol.
	- Light guide is not fully inserted in receptacle.	Check light guide connection.
	- Light guide has exceeded its useful life.	Replace light guide.

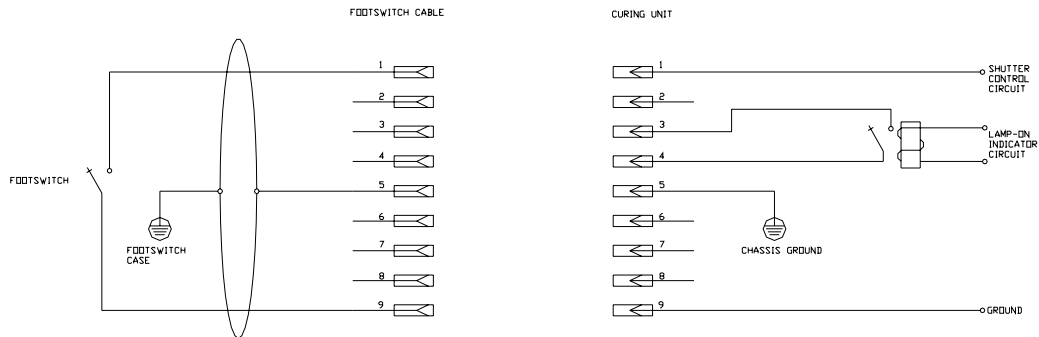
8. Documentation

8.1 Wiring Diagram

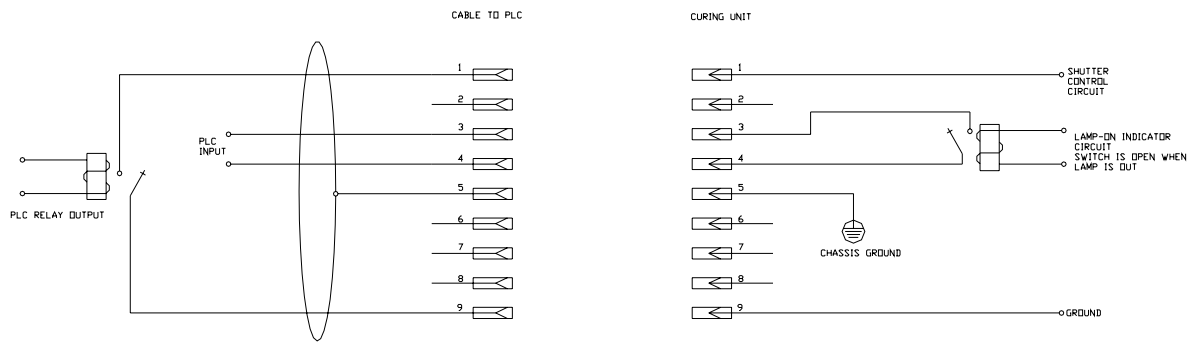


8.2 Pin Connections

MANUALLY OPERATED SYSTEM



PLC OPERATED SYSTEM



8.3 Replacement Parts and Accessories

Loctite Part Number	Description
98451	Replacement Lamp Module
97326	Single End Light Guide (5 mm x 1M)
97328	Dual Ended Light Guide (3 mm x 1M)
98543	Single Light Guide (5 mm x 1.5M)
984770	Fan Filter Element, Quantity 5
97210	UV Safety Glasses
986051	Foot Switch Assembly
1079258	Loctite [®] 98720 UV Spot Radiometer
951639	Dual Wand Adapter Kit
967056	Lamp Ignitor
967057	Lamp Ballast
1116644	Switching Power Supply

9. Warranty

Henkel expressly warrants that all products referred to in this Instruction Manual for the UV Curing Wand System, (hereafter called "Product"), shall be free from defects in materials and workmanship. Liability for Henkel shall be limited, as its option, to replacing those Products which are shown to be defective in either materials or workmanship or to credit the purchaser the amount of the purchase price thereof (plus freight and insurance charges paid therefore by the user). The purchaser's sole and exclusive remedy for breach of warranty shall be such replacement or credit.

A claim of defect in materials or workmanship in any Product shall be allowed only when it is submitted in writing within one month after discovery of the defect or after the time the defect should reasonably have been discovered and in any event, within 2 years after the delivery of the Products to the purchaser. This warranty does not apply to perishable items, such as fuses and fan filters. The lamp is fully warranted for 500 hours of operation for failure to ignite. The lamp is also warranted to produce 60% of the minimum rated initial output at 500 hours of operating time. No such claim shall be allowed in respect of products which have been neglected or improperly stored, transported, handled, installed, connected, operated, used or maintained. In the event of unauthorized modification of the Products including, where products, parts or attachments for use in connection with the Products are available from Henkel, the use of products, parts or attachments which are not manufactured by Henkel, no claim shall be allowed.

No Products shall be returned to Henkel for any reason without prior written approval from Henkel. Products shall be returned freight prepaid, in accordance with instructions from Henkel.

NO WARRANTY IS EXTENDED TO ANY EQUIPMENT WHICH HAS BEEN ALTERED, MISUSED, NEGLECTED, OR DAMAGED BY ACCIDENT, OR IF THE SYSTEM USED TO DISPENSE ANY LIQUID MATERIAL OTHER THAN HENKEL PRODUCTS.

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Henkel Corporation
1001 Trout Brook Crossing
Rocky Hill, CT 06067-3910

Henkel Canada Corporation
2225 Meadowpine Boulevard
Mississauga, Ontario L5N 7P2

Henkel Capital, S.A. de C.V.
Calzada de la Viga s/n Fracc. Los Laureles
Loc. Tulpetlac, C.P. 55090
Ecatepec de Morelos, Edo. de México

Henkel Automotive
Technology Center
2455 Featherstone Road
Auburn Hills, Michigan 48326

Henkel Ltda.
Rua Karl Huller, 136 – Jd.
Canhema 09941-410
Diadema/SP, Brazil

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